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EXAMINER	
YUEN, KAN	

ART UNIT	PAPER NUMBER
2616	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,242	YOON ET AL.	
	Examiner	Art Unit	
	Kan Yuen	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 11 July 2007.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-12 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Response to Arguments

1. Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 4, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings et al. (Pub No.: 2003/0002499), in view of Westberg (Pat No.: 6791982), and Shiomoto (Pat No.: 6289485).

For claim 1, Cummings et al. disclosed the method of segmenting a jumbogram to be transmitted through the WAN into messages each having a predetermined length (see paragraph 0088, lines 1-7, and also see figs. 4 and 5). The term jumbogram can be interpreted as any big packets; and sequentially encoding each segmented message, adding a parity bit to the message to be formed into a codeword, and transmitting the codeword through the WAN (see paragraph 0090, lines 1-12, and see paragraph 0102, lines 10-19). As stated in the reference, a packet is received at step 402 and then segmented into small groups of k segments. At step 406, the outer block code performs parity check to compute parity bit for each row segment. Each row of parity bit represents a separate Hamming codeword. However, Cummings et al. did not disclose the method of adding a length of parity bits to payload length information of the corresponding first segmented message, and transmission of packets in WAN. Westberg from the same or similar fields of endeavor teaches the method of transmission of packets in WAN (see column 5, lines 50-60), as revealed in the reference the segments of packet are transmitting over a WAN. Thus, it would have

been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Westberg in the network of Cummings et al. The motivation for using the method as taught by Westberg in the network of Cummings et al. being that it provides a full range of capabilities that supported in wired or wireless connection. Shiomoto from the same or similar fields of endeavor teaches the method of adding a length of parity bits to payload length information of the corresponding first segmented message (see column 1, lines 40-55). The outer code encoding circuit 3 performs encoding of error correction codes with respect to each of successive payload have fixed length forming the source coded data S2 to add a fixed length parity bit to each payload. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Shiomoto in the network of Cummings et al. and Westberg. The motivation for using the method as taught by Shiomoto in the network of Cummings et al. and Westberg being that it increases the error correction ability.

Regarding to claim 4, Cummings et al. also disclosed the method of converting the payload length information included in the segmented packet into length information after being converted into a codeword (see paragraph 0105, lines 1-12). In the reference, after parity bits were added to the segments, the unique identification number is pretended to each segment. The FEC is performed to encode on the MAC header and the payload. As the result, we can interpret that each payload length of segment is encoded or converted with unique ID. The term length information is interpreted as an unique ID.

Regarding to claim 9, Cummings et al. also disclosed the method of transmitting and receiving a massive jumbogram through a WAN (wide area network), a method for transmitting and receiving a massive packet in the WAN, comprising: (a) segmenting a packet to be transmitted through the WAN into messages having a predetermined length (see paragraph 0088, lines 1-7, and also see figs. 4 and 5); (b) sequentially encoding the respective segmented messages, adding a parity bit to each of them, making the parity bit added message into a codeword (see paragraph 0090, lines 1-12, and see paragraph 0102, lines 10-19); As stated in the reference, a packet is received at step 402 and then segmented into small groups of k segments. At step 406, the outer block code performs parity check to compute parity bit for each row segment. Each row of parity bit represents a separate Hamming codeword; and transmitting the codeword; and (c) receiving the transmitted codeword to determine whether an error has occurred in it, correcting the error when it is found, and removing a parity bit from the codeword to recover the codeword to an original message (see paragraph 0095, lines 1-10, and see paragraph 0096, lines 1-10, and see paragraph 0097 lines 4-10, see paragraph 0098, lines 10-15, see paragraph 0099 1-15, and also see fig. 5). As revealed in the reference, the Forward Error Correction is performed after the bursts are received. The FEC detects and corrects the bad segments. Decoding step arranging the n information and parity segments as n columns, where any segments marked as erased for decoding purposes. In this case, we can interpret that the parity bits are erased or removed to decode the segments. However, Cumming et al. did not disclose the method of adding a length of parity bits to payload length information of the

corresponding first segmented message, and transmission of jumbograms through a WAN. Westberg from the same or similar fields of endeavor teaches the method of transmission of segmented datagram through a WAN. Segmented Datagram in this case, can be referred to as jumbogram. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Westberg in the network of Cummings et al. The motivation for using the method as taught by Westberg in the network of Cummings et al. being that it provides a full range of capabilities that supported in wired or wireless connection. Shiomoto from the same or similar fields of endeavor teaches the method of adding a length of parity bits to payload length information of the corresponding first segmented message (see column 1, lines 40-55). The outer code encoding circuit 3 performs encoding of error correction codes with respect to each of successive payload have fixed length forming the source coded data S2 to add a fixed length parity bit to each payload. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Shiomoto in the network of Cummings et al. and Westberg. The motivation for using the method as taught by Shiomoto in the network of Cummings et al. and Westberg being that it increases the error correction ability.

4. Claims 2, 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings et al. (Pub No.: 2003/0002499), in view of Westberg (Pat No.: 6791982), and

Shiomoto (Pat No.: 6289485), as applied to claim 1 above, and further in view of Karr (Pat No.: 6970465).

For claim 2, Cumming et al., Shiomoto and Westberg both disclosed all the subject matter of the claimed invention with the exception of determining whether the last message from among the segmented messages is less than a predetermined length; and adding at least one padding bit to the corresponding last message to make the last message have a predetermined length when the last message is less than the predetermined length according to a determination result. Karr from the same or similar fields of endeavor teaches the method of determining whether the last message from among the segmented messages is less than a predetermined length; and adding at least one padding bit to the corresponding last message to make the last message have a predetermined length when the last message is less than the predetermined length according to a determination result (see column 6, lines 60-67, and see column 7, lines 1-10). As revealed in the reference, a packet is segmented into seven segments, and the Hamming code can determine and correct any of the seven segment lengths by padding with an extra bit to achieve the predetermined length. Thus, its obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Karr in the network of Cummings et al. Shiomoto and Westberg. The motivation for using the method as taught by Karr in the network of Cummings et al. Shiomoto and Westberg being that each segmented data can be transmitted in a equal length segment.

For claim 3, Cumming et al. Shiomoto and Westberg both disclosed all the subject matter of the claimed invention with the exception of it is determined by using payload length information of the corresponding packet whether the segmented last message is less than the predetermined length. Karr from the same or similar fields of endeavor teaches the method of its determined by using payload length information of the corresponding packet whether the segmented last message is less than the predetermined length. (see column 6, lines 60-67, and see column 7, lines 1-10). As revealed in the reference, a packet is segmented into seven segments, and the Hamming code determined that the segment (15, 11) still needs one more bit to achieve (16, 11), and 15 being the payload length of the segment. The hamming code padded with an extra bit to achieve the predetermined length. Thus, its obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Karr in the network of Cummings et al. Shiomoto and Westberg. The motivation for using the method as taught by Karr in the network of Cummings et al. Shiomoto and Westberg being that each segmented data can be transmitted in a equal length segment.

6. Claims 5, 6, 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings et al. (Pub No.: 2003/0002499), in view of Westberg (Pat No.: 6791982), and Scheinbart et al. (Pat No.: 6601150).

Regarding to claim 5, Cummings et al. also disclosed the method of receiving an encoded codeword through the WAN; determining whether an error has occurred in the

received codeword, correcting the error when it is found, and removing a parity bit included in the error-corrected codeword to recover the codeword to an original message; (see paragraph 0095, lines 1-10, and see paragraph 0096, lines 1-10, and see paragraph 0097 lines 4-10, see paragraph 0098, lines 10-15, see paragraph 0099 1-15, and also see fig. 5). As revealed in the reference, the Forward Error Correction is performed after the bursts are received. The FEC detects and corrects the bad segments. Decoding step arranging the n information and parity segments as n columns, where any segments marked as erased for decoding purposes. In this case, we can interpret that the parity bits are erased or removed to decode the segments; and decoding the recovered message and recovering the decoded message to a massive jumbogram. Lastly, the segments can be group back to form an original packet by using any alternative techniques. However, Cumming et al. did not disclose the method of determining whether the received codeword is the last codeword by using payload length information included in the corresponding first codeword; and transmission of jumbograms through a WAN. Westberg from the same or similar fields of endeavor teaches the method of transmission of segmented datagram through a WAN (see column 5, lines 50-60). Segmented Datagram in this case, can be referred to as jumbogram. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Westberg in the network of Cummings et al. The motivation for using the method as taught by Westberg in the network of Cummings et al. being that it provides a full range of devices that supported in wired or wireless connection. Scheinbart et al. from the same or similar fields of

endeavor teaches the method of determining whether the received codeword is the last codeword by using payload length information included in the corresponding first codeword (see column 7, lines 10-20). The writer 706 determines the end of the packet, and therefore determines when to send the LCODE WRITE LAST command, based upon the packet length of the packet header. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Scheinbart et al. in the network of Cummings et al. and Westberg. The motivation for using the method as taught by Scheinbart et al. in the network of Cummings et al. and Westberg being that it lowers the processing time of the system.

Regarding to claim 6, Cummings et al. also disclosed the method of the determination of error occurrence and the error correction method employ a FEC (forward error correction) method (see paragraph 0096, lines 1-10).

Regarding to claim 10, Cummings et al. also disclosed the method of an encoder for segmenting packets for transmission through the WAN into messages having a predetermined length, encoding the respective segmented messages (see paragraph 0088, lines 1-7, and also see figs. 4 and 5), adding a parity bit to each encoded message to make it into a codeword, and transmitting the codeword (see paragraph 0090, lines 1-12, and see column 0102, lines 10-19); As stated in the reference, a packet is received at step 402 and then segmented into small groups of k segments. At step 406, the outer block code performs parity check to compute parity bit for each row segment. Each row of parity bit represents a separate Hamming codeword. This section can be interpreted as an encoder; and a decoder for receiving the codeword from the

encoder through the WAN, correcting an error of the corresponding codeword (see paragraph 0095, lines 1-10, and see paragraph 0096, lines 1-10, and see paragraph 0097 lines 4-10, see paragraph 0098, lines 10-15, and also see fig. 5). As revealed in the reference, the Forward Error Correction is performed after the bursts are received. The FEC detects and corrects the bad segments; and removing a parity bit included in the corresponding codeword to recover the codeword to the original message (see paragraph 0099, lines 1-15). Decoding step arranging the n information and parity segments as n columns, where any segments marked as erased for decoding purposes. In this case, we can interpret that the parity bits are erased or removed to decode the segments. This section can be interpreted as a decoder. However, Cumming et al. did not disclose the method of determining whether the received codeword is the last codeword by using payload length information included in the corresponding first codeword; and transmission of packet through a WAN. Westberg from the same or similar fields of endeavor teaches the method of transmission of segmented datagram through a WAN. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Westberg in the network of Cummings et al. The motivation for using the method as taught by Westberg in the network of Cummings et al. being that it provides a full range of capabilities that supported in wired or wireless connection. Scheinbart et al. from the same or similar fields of endeavor teaches the method of determining whether the received codeword is the last codeword by using payload length information included in the corresponding first codeword (see column 7, lines 10-20). The writer 706

determines the end of the packet, and therefore determines when to send the LCODE WRITE LAST command, based upon the packet length of the packet header. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Scheinbart et al. in the network of Cummings et al. and Westberg. The motivation for using the method as taught by Scheinbart et al. in the network of Cummings et al. and Westberg being that it lowers the processing time of the system.

7. Claims 7, 8 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings et al. (Pub No.: 2003/0002499), in view of Westberg (Pat No.: 6791982), and Scheinbart et al. (Pat No.: 6601150), as applied to claim 5 above, and further in view of Galand et al. (Pat No.: 6317433).

For claim 7 Cummings et al. disclosed the method of determining whether an error has occurred in the received last codeword, correcting the error when it is found, and removing the parity bit to recover the codeword to a message (see paragraph 0095, lines 1-10, and see paragraph 0096, lines 1-10, and see paragraph 0097 lines 4-10, see paragraph 0098, lines 10-15, see paragraph 0099 1-15, and also see fig. 5). As revealed in the reference, the Forward Error Correction is performed after the bursts are received. The FEC detects and corrects the bad segments. Decoding step arranging the n information and parity segments as n columns, where any segments marked as erased for decoding purposes. In this case, we can interpret that the parity bits are

erased or removed to decode the segments. However, Cummings et al. did not disclose the method of determining whether the corresponding last message has at least one padding bit, and removing the at least one padding bit when it is found. Galand et al. from the same or similar fields of endeavor teaches the method of determining whether the corresponding last message has at least one padding bit, and removing the at least one padding bit when it is found (see column 9, lines 1-12). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Galand et al. in the network of Cummings et al. and Westberg and Scheinbart et al. The motivation for using the method as taught by Galand et al. in the network of Cummings et al. and Westberg and Scheinbart et al being that it optimizing transmission bandwidth utilization in ATM packet switching network.

Regarding to claim 8, Cummings did not disclose the method of it is determined using payload length information of the corresponding packet whether the last message has at least one padding bit. Galand et al. from the same or similar fields of endeavor teaches the method of it is determined using payload length information of the corresponding packet whether the last message has at least one padding bit (see column 2, lines 36-41). As stated in the reference, the last constructed ATM packet from each PTM packet will typically have less than 48 bytes of data payload and will need padding bits. Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Galand et al. in the network of Cummings et al. and Westberg, and Scheinbart et al. The motivation for using the method as taught by Galand et al. in the network of Cummings et al. and

Westberg, and Scheinbart et al. being that it optimizing transmission bandwidth utilization in ATM packet switching network.

Regarding to claim 12, Cummings did not disclose the method of the decoder recovers the last codeword from among the codewords received through the WAN, determines whether at least one padding bit is provided, and removes the at least one padding bit when they are found. Galand et al. also teaches the method of the decoder recovers the last codeword from among the codewords received through the WAN, determines whether at least one padding bit is provided, and removes the at least one padding bit when they are found (see column 9, lines 1-12). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught by Galand et al. in the network of Cummings et al. and Westberg, and Scheinbart et al. The motivation for using the method as taught by Galand et al. in the network of Cummings et al. and Westberg, and Scheinbart et al. being that it optimizing transmission bandwidth utilization in ATM packet switching network.

8. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cummings et al. (Pub No.: 2003/0002499), in view of Westberg (Pat No.: 6791982), and Scheinbart et al. (Pat No.: 6601150), as applied to claim 10 above, and further in view of Petersen et al. (Pat No.: 5802051).

For claim 11, Cummings et al. and Westberg disclosed all the subject matter of the claimed invention with the exception of the encoder adds at least one padding bit to

the last message of the segmented packet to make the last message have a predetermined length when the last message is less than the predetermined length. Petersen et al. from the same or similar fields of endeavor teaches the method of the encoder adds at least one padding bit to the last message of the segmented packet to make the last message have a predetermined length when the last message is less than the predetermined length (see column 8, lines 1-3). Thus, it would have been obvious to the person of ordinary skilled in the art at the time of the invention to use the method as taught.by Petersen et al. in the network of Cumming et al. and Westberg, and Scheinbart et al. The motivation for using the method as taught by Petersen et al. in the network of Cumming et al. and Westberg, and Scheinbart et al. being that it provdes an improved AALm that takes transmission priority into consideration when generating and multiplexing segment minicells into the ATM cell stream.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kan Yuen whose telephone number is 571-270-2413. The examiner can normally be reached on Monday-Friday 10:00a.m-3:00p.m EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky O. Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SUPERVISORY PATENT EXAMINER